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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,317	01/11/2002	Tosifumi Kojima	Q68073	4415

7590 06/04/2003  
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EXAMINER  
KEEHAN, CHRISTOPHER M

ART UNIT PAPER NUMBER

1712

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/042,317

Applicant(s)

KOJIMA ET AL.

Examiner

Christopher M. Keehan

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Examiner's Suggestions*

The following are suggestions by the examiner to create a clearer prosecution record. These suggestions are not objections or rejections, but merely some things that might prove helpful upon consideration by applicant. In claim 8, the claim language "provided at least one side" is not clear. Perhaps "provided on at least one side" might help clarify the claim. Further, in claim 8, the claim language "the build-up layer" could probably be "built-up layer" as claimed previously in the claim. Claim 7, the claim language "a semiconductor disposed substantially above the electronic part" appears to read on a multitude of scenarios. In any modern electronic equipment there is bound to be a semiconductor located substantially above an electronic component, such as that of Kawamoto et al. Perhaps adding some structure to the claim would be helpful.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 5, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamoto et al. (JP 09096046, full English translation, attached). The examiner is relying on the full English translation of this JP document. Regarding claims 1 and 2, Kawamoto et al. disclose an embedding resin for embedding an

electronic part in a wiring substrate comprising at least one of a soluble resin and a soluble filler as a soluble component to be dissolved with an oxidizing agent (sections 0020 and 0030).

Regarding claim 4, Kawamoto et al. disclose a substrate having an opening, an electronic part disposed in the opening, and an embedding resin according to claim 1, wherein the gap between the substrate and the electronic part is filled with the embedding resin (Figures 1 and 2).

Regarding claim 5, Kawamoto et al. disclose a wiring, wherein the wiring is provided at least partly on the embedding resin, and the embedding resin is roughened at least on an interface thereof in contact with the wiring (section 0020, section 0029, and Figures 1 and 2).

Regarding claim 8, Kawamoto et al. disclose a core substrate and a built-up layer provided on at least one side of the core layer and formed by alternately laminating an insulating layer and a wiring layer (sections 0021-0026), wherein the core substrate and the built-up layer has the opening penetrating therethrough (Figures 1 and 2).

Regarding claim 9, Kawamoto et al. disclose the instantly claimed process steps (section 0012, section 0014, sections 0020 and 0030, and section 00029).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 8, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura et al. (6,376,053 B1). Nakamura et al. disclose an embedding resin comprising at least one soluble resin (col.4, line 58-col.5, line 24) and a soluble organic filler (col.7, lines 3-27) as a soluble component to be dissolved with an oxidizing agent col.10, lines 3-15).

Regarding claim 2, Nakamura et al. disclose at least one of a liquid epoxy resin (col.5, lines 25-64) and an inorganic filler (col.4, lines 32-48) as an undissolved component that is not substantially dissolved in the oxidizing agent.

Regarding claim 3, Nakamura et al. disclose a bisphenol epoxy resin (col.4, line 58-col.5, line 24).

Regarding claim 4, Nakamura et al. disclose a substrate comprising a substrate having an opening, an electronic part in the opening, and an embedding resin according to claim 1, wherein a gap between the substrate and the electronic part is filled with the embedding resin (Figure 1).

Regarding claim 5, Nakamura et al. disclose a wiring, wherein the wiring is provided at least partly on the resin, and the resin is roughened at least on an interface thereof in contact with the wiring (col.10, lines 3-15).

Regarding claim 8, Nakamura et al. disclose a core substrate and a built-up layer provided on at least one side of the core layer and formed by alternately laminating an insulating layer and a wiring layer, wherein the core substrate and the built-up layer has

the opening penetrating therethrough (Figures 3 and 4, and col.8, line 58-col.10, line 32).

Regarding claim 9, Nakamura et al. disclose the instantly claimed process steps (col.8, line 58-col.10, line 32, and Figures 3 and 4).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto et al. (JP 09096046). Kawamoto et al., as applied to claim 1 above, are as set forth and incorporated herein. Kawamoto et al. do not appear to specifically disclose a semiconductor disposed substantially above the electronic part. Kawamoto et al. do disclose an outer wiring connection (Figure 2) and use of the invention in notebook computers (section 0005). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for a semiconductor to be connected to these outer wiring leads at some point substantially above the electronic component because semiconductors are prevalent in notebook computers and the wiring leads would have been connected to something, such as a semiconductor.

### ***Allowable Subject Matter***

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. A reasonable search of the prior art of record failed to reveal the limitations as set forth in claim 6, specifically an electrode with a roughened surface as instantly claimed. Kawamoto et al. disclose an outer wiring connection that can act as an electrode, but do not teach or disclose the instantly claimed roughened surface.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Keehan whose telephone number is (703) 305-2778. The examiner can normally be reached on Monday-Friday, from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Dawson can be reached on 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Robert Dawson  
Supervisory Patent Examiner  
Technology Center 1700

Christopher Keehan (mw)

April 29, 2003